

What is claimed is:

1. A point-to-point millimeter wave communications system comprising:
  - A) a first millimeter wave transceiver system located at a first site capable of transmitting and receiving to and from a second site through atmosphere digital information at rates in excess of 155 million bits per second during normal weather conditions, said first transceiver comprising a first tracking dish antenna producing a beam having a half-power beam width of about 2 degrees or less,
  - B) a second millimeter wave transceiver system located at said second site capable of transmitting and receiving to and from said first site digital information at rates in excess of 155 million bits per second during normal weather condition, said second transceiver comprising a second tracking dish antenna producing a beam having a half-power beam width of about 2 degrees or less.
2. A system as in Claim 1 wherein at least one of said tracking dish antennas comprises a monopulse tracking system.
3. A system as in Claim 1 wherein each of said first and said second tracking dish antennas comprises a monopulse tracking system.
4. A system as in Claim 1 wherein at least one of said tracking dish antennas comprises a conical scan tracking system.
5. A system as in Claim 1 wherein at least one of said tracking dish antennas comprises a sequential lobing tracking system.
6. A system as in Claim 1 wherein said first transceiver system is configured to transmit and receive information at frequencies greater than 57 GHz.
7. A system as in Claim 1 wherein said first transceiver system is configured to transmit and receive information at frequencies greater than 90 GHz.
8. A system as in Claim 1 wherein said first transceiver system is configured to transmit and receive information at frequencies between 92 and 95 GHz.
9. A system as in Claim 1 wherein one of said first and second transceiver systems is configured to transmit at frequencies in the range of about 92.3 to 93.2 GHz and to receive information at frequencies in the range of about 94.1 to 95.0 GHz.

10. A system as in Claim 1 and further comprising a back-up transceiver system operating at a data transmittal rate of less than 155 million bits per second configured continue transmittal of information between said first and second sites in the event of abnormal weather conditions.
11. A system as in Claim 10 wherein said backup transceiver system is a microwave system.
12. A system as in Claim 12 wherein said backup transceiver system is configured to operate in the frequency range of 10.7 to 11.7 GHz.
13. A system as in Claim 12 wherein said backup transceiver system is configured to operate in the frequency range of 5.9 to 6.9 GHz.
14. A system as in Claim 12 wherein said backup transceiver system is configured to operate in the frequency range of 13 to 23 GHz.
15. A system as in Claim 1 wherein said first and said second sites are separated by at least one mile.
16. A system as in Claim 1 wherein said first and said second sites are separated by at least 2 miles.
17. A system as in Claim 1 wherein said first and said second sites are separated by at least 7 miles.
18. A system as in Claim 1 wherein said first and said second sites are separated by at least 10 miles.
19. A system as in Claim 1 wherein each of said first and said second transceiver are configured to transmit and receive information at bit error ratios of less than  $10^{-10}$  during normal weather conditions.
20. A system as in Claim 1 wherein both said first and said second transceiver systems are equipped with antennas providing a gain of greater than 40 dB.
21. A system as in Claim 1 wherein both said first and said second transceiver systems are equipped with antennas providing a gain of greater than 45 dB.
22. A system as in Claim 1 wherein the antennas in both said first and said second transceiver systems are configured to provide gains of greater than 50 dB.
23. A system as in Claim 22 wherein at least one of said antennas is a Cassegrain antenna.

24. A system as in Claim 22 wherein at least one of said antennas is a prime focus parabolic antenna.
25. A system as in Claim 22 wherein at least one of said antennas is an offset parabolic antenna.
26. A system as in Claim 1 wherein said first and second systems are capable of transmitting and receiving at rates in excess of 1 billion bits per second and the antennas of both systems are configured to produce beam having half-power beam widths of about 0.36 degrees or less.